SEQUENCE LISTING

<110> Fischetti, Vincent
     Nelson, Daniel
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<120> Nucleic Acids and Polypeptides of C1
  Bacteriophage and Uses Thereof

<130> 600-1-297PCT

<150> 60/470655
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<160> 31

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 173
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 1
Met Lys Ile Arg Met Lys Thr Ile Tyr Thr Phe Ser Thr Thr Ile Ala
1   5   10   15
Thr Leu Ala Leu Gly Val Asn Leu Leu Met Asp Lys Gly Asp Asn Asn
            20   25   30
Asn Val Asn Thr Asp Asn Thr Phe Asn Asn Ser Asn Pro Ile Val Gln
        35   40   45
Val Asp Asn Asn Ser Ser Glu Ala Thr Thr Thr Ile Thr Ser Asp Thr
    50   55   60
Asn Asp Asn Gln Val Ala Ala Asp Asp Thr Asn Asp Thr Glu Gln Leu
65   70   75   80
Asp Tyr Phe Gln Pro Tyr Glu Tyr Leu Tyr Met Pro Ser Thr Asn Val
                85   90   95
Ser Ser Ile Arg Asp Gly Tyr Tyr Leu Val Ser Gly Gly Asn Thr Leu
            100   105   110
Ala Ala Val Gln Ile Thr Asn Gly Tyr Thr Thr Asp Glu Phe Arg Leu
            115   120   125
Lys Asn Ile Ser Ala Glu Gln Trp Thr Val Ser Gln Gln Gln Met Glu
    130   135   140
Asp Phe Val Tyr Trp Leu Arg Glu Val Ser Pro Ser Gly Tyr Asn Gln
145   150   155   160
Lys Ser Leu Glu Asn Asn Phe Lys Ile Phe Ile Lys Lys
                165   170

<210> 2
<211> 62
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 2
Met Lys Thr Gln Glu Trp Tyr Leu Val Asn Phe Gly Leu Tyr Glu Thr

```
                1                 5                           10                          15
          Lys Thr Gln Glu Met Glu Thr Asn Ser Arg Tyr Phe Glu Asp Lys Gln
                         20                          25                          30
          Ala Ala Leu Asp Phe Phe Tyr Thr Leu Ala Asn Glu Gly Tyr Tyr Asp
                   35                          40                          45
          Trp Ala His Val Tyr Ser Asn Leu Glu Met Glu Ile Ile Leu
             50                          55                          60
```

<210> 3
<211> 178
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 3
```
          Met Lys Gln Thr Asn Ile Asp Ala Leu Phe Gly Lys Gly Asp His Gln
          1                 5                           10                          15
          Leu Met Asn Lys Glu Ser Lys Tyr Leu Ser Thr Leu Phe Ile Asn Ile
                         20                          25                          30
          Glu Glu Leu Ser Val His Leu Ser Ser Val Thr Leu Phe Ile Asp Glu
                   35                          40                          45
          Tyr Glu Gln Leu Lys Glu Asn Ala Ile Lys Ser Lys Asn Gly Lys Cys
             50                          55                          60
          Leu Lys Leu Gly Asn Thr Leu Tyr Phe Thr Asn Asn Asn Tyr Ala Thr
          65                          70                          75                          80
          Lys Leu Tyr Asn Ser Leu Leu Ala Leu Gly Phe Asn Gly Ala Asn Ser
                         85                          90                          95
          Phe Ser Ser Gly Glu Gln Thr Tyr Val Ile Ser Leu Thr Gly Gly Asn
                         100                         105                         110
          Ala Thr Leu Thr Thr Val Lys Thr His Tyr Gly Asp Val Lys Tyr His
                   115                         120                         125
          Tyr Lys His Glu Lys Leu Pro Val Lys Lys Ile Val Asn Asp Phe Trp
             130                         135                         140
          Leu Ser Glu Gln Glu Tyr Val Tyr Thr Asn Ser Ile Lys Leu Ala Tyr
          145                         150                         155                         160
          Ala Leu Leu Asp Leu Tyr Lys Thr Met Gly Tyr Ser Thr Leu Asn Thr
                         165                         170                         175
          Ile Lys
```

<210> 4
<211> 105
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 4
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          Met Ala Ile Asn Phe Thr Asn Ile Gly Phe Ile Asn Phe Asn Lys Glu
          1                 5                           10                          15
          Tyr Asn Lys Val Leu Lys Asn Gly Ala Ile Thr Ala Ser Met Ser Ala
                         20                          25                          30
          Ser Gln Lys Asp Val Lys Gly Glu Tyr Val Asp Glu Tyr His Asn Val
                   35                          40                          45
          Thr Ile Pro Lys Lys Val Ala Asp Gln Ile Lys Pro Leu Ile Asn Thr
             50                          55                          60
          Glu Leu Cys Asp Ile Gln Gly Val Ile Ser Arg Asn Asp Lys Tyr Thr
          65                          70                          75                          80
```

```
Asn Ile Thr Ile Leu Gly Ala Lys Lys His Val Lys Ala Glu Ala Val
                    85                  90                  95
Asp Val Ala Asp Glu Asp Leu Pro Phe
            100             105


<210> 5
<211> 207
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 5
Met Lys Gly Asp Glu Glu Arg Thr Ile Lys Ser Leu Phe Pro Leu Phe
  1               5                  10                  15
Lys Tyr Met Ala Asn Lys Arg Gln Arg Lys Lys Gln Leu Lys Gln Gln
            20                  25                  30
Tyr Gly Val Gly His Lys Tyr Thr Pro Lys Leu Ser Gln Thr Gln Gln
            35                  40                  45
Lys Gln Ala Asp Phe Leu Lys Ser Ile Gly Gln Lys Phe Thr Asn Tyr
        50                  55                  60
Gln Thr Val Thr Ile Asp Lys Thr Tyr Ser Lys Asn Gln Glu Leu Leu
65                      70                  75                  80
Asp Thr Ala Asn Glu Ala Leu His Arg Leu Gly Ile Phe Phe Asp Gly
                85                  90                  95
Ser Glu Lys Ile Lys Leu Gln Gln Val Thr Asp Asp Asp Leu Arg Tyr
            100                 105                 110
Ile Ile Asn Lys Leu Gln Pro Leu Leu Glu Ser Val Thr Met Arg Tyr
            115                 120                 125
Lys Lys Phe Leu Thr Asn Thr Tyr Arg Ser Asn Asn Arg Asp Tyr Arg
            130                 135                 140
Leu Asp Trp Leu Leu Lys Ser Ala Ile Ser Lys Lys Leu Lys Asn Ala
145                 150                 155                 160
Gln Thr Val Arg Gly Leu Val Val Ala Ile Asn Lys Met Asp Arg Asp
                165                 170                 175
Phe Lys Glu Tyr Asp Lys Lys Leu Arg Lys Ser Ser Lys Gln Gly Asn
            180                 185                 190
Pro Phe Gly Phe Val Val Val Lys Tyr Ser Glu Met Gly Leu Met
            195                 200                 205


<210> 6
<211> 408
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 6
Met Ala Arg Lys Val Lys Lys Thr Ile Lys Thr Ile Phe Lys Asn Glu
  1               5                  10                  15
Glu Glu Glu Phe Lys Thr Leu Leu Asn Asp Tyr Arg Lys Lys Tyr Leu
            20                  25                  30
Pro Ser Lys Tyr Asn Gln Leu Glu Leu Leu Asp Trp Leu Cys Ser Asp
            35                  40                  45
Glu Ile Leu His Tyr Met Ser Ile Thr Ser Arg Gly Asp Gly Lys Ser
        50                  55                  60
Phe Asn Tyr Ile Gly Ala Leu Ala Trp Leu Ser Tyr His Leu Asn Phe
65                  70                  75                  80
Gly Thr Met Leu Leu Val Arg His Trp Ser Leu Met Asp Lys Met Ala
```

```
                    85                      90                       95
Glu Met Val Phe Glu Ile Ile Arg Thr Val Gly Met Phe Asp Ile Glu
                100                     105                     110
Asn Val Gly Ile Gln Ala Lys Ala Asp Tyr Leu Thr Ile Thr Ile Glu
                115                     120                     125
Gly Arg Glu Val Phe Ile Ile Thr Asn Leu Asn Asn Ala Ser Asp Leu
                130                     135                     140
Lys Gln Ser Ser Ala Val Leu Arg Asn Tyr Pro Val Val Leu Tyr Asp
145                     150                     155                     160
Glu Phe Leu Thr Leu Gly Glu Asp Tyr Val Thr Asn Glu Leu Ala Lys
                165                     170                     175
Leu Gln Thr Ile Ile Lys Ser Ile Asp Arg Met Gly Lys Arg Pro Tyr
                180                     185                     190
Ile Lys Arg Pro Lys Ile Ile Tyr Leu Gly Asn Pro Val Asn Phe Asp
                195                     200                     205
Ser Pro Ile Leu Pro Ala Leu Asn Ile Phe Tyr Ala Leu Gln Asn Gln
                210                     215                     220
Glu Ile Asn Thr Ile Gln Gln His Gly Lys Thr Ile Leu Glu Leu Arg
225                     230                     235                     240
Arg Asn Asp Glu Val Asn Glu Glu Lys Thr Thr Gly Tyr Phe Glu Asp
                245                     250                     255
Ser Val Asp Ser Asp Ile Thr Gly Glu Phe Asn Phe Ser Asn Tyr Arg
                260                     265                     270
Leu Ala Asp Gln Gln Thr Tyr Asn Lys Ala Leu Thr Asn Gly Thr Leu
                275                     280                     285
Tyr Lys Ile Arg Leu Glu Asp Lys Leu Ser Tyr Val Ile Leu Glu Ser
                290                     295                     300
Asp Asn Glu Tyr Ile Leu Ser Ile Glu Glu Ser Lys Leu Asp Glu Asn
305                     310                     315                     320
Tyr Cys Ile His Leu Lys Asp Glu Thr Ala Thr Cys Glu Tyr Leu Lys
                325                     330                     335
Pro Ser Phe Tyr Lys Asp Ser Phe Ile Lys Arg Phe Gln Lys Gly His
                340                     345                     350
Phe Asn Phe Lys Asp Ser Phe Ser Arg Thr Phe Ile Glu Gly Asn Glu
                355                     360                     365
Asp Leu Gln Arg Leu Asn Phe Phe Lys Leu Asn Ala Val Ala Ser Thr
                370                     375                     380
Asp His Glu Asp Ala Tyr Ala Asn Ile Val Arg Glu Ser Trp Ile Ser
385                     390                     395                     400
Arg Leu Ala Lys Ile Tyr Glu Gln
                405


<210> 7
<211> 784
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 7
Met Lys Glu Phe Glu Gln Tyr Leu Lys Ser Phe Lys Gly Gln Lys Val
  1                   5                      10                      15
Thr Ser Val Asp Leu Tyr Cys Asp Ile Glu Thr Ala Thr Ile Asn Lys
                20                      25                      30
Asn Ser Gly Gln Lys His Ala Ser Thr Tyr His Ser Phe Thr Tyr Ser
          35                      40                      45
Leu Ala Val Ser Tyr Phe Lys Thr Gly Glu Glu Phe Pro Ser Val Val
      50                      55                      60
```

```
  Val Phe Asn His Phe Lys Gln Leu Phe Asp Phe Ile Glu Lys Ser Lys
  65                  70                  75                      80
  Ile Arg Lys Ser Ile Glu Phe Arg Leu Ile Phe His Asn Gly Ala Lys
                  85                  90                  95
  Tyr Asp Asn His Phe Met Val Ser Glu Ile Gln Arg Asp Ile Asp Asn
                  100                 105                 110
  Val Arg Leu Phe Asn Gln Thr Ile Lys Gln Val Asn His Ile Thr Asp
                  115                 120                 125
  Leu Asp Leu Ser Lys Lys Gln Gly Lys Gln Met Arg Asn Asp Val Asn
      130                 135                 140
  Met Val Leu Glu Arg Arg Val Arg Ser Ser Asn Asn Leu Asp Gly Asp
  145                 150                 155                 160
  Met Trp Ile Tyr Gly Arg His Tyr Glu Met Val Asp Ser Tyr Arg Lys
                  165                 170                 175
  Thr Asn Val Ser Ile Glu Leu Cys Gly Arg Met Leu Leu Asn Asn Gly
                  180                 185                 190
  Leu Ile Asp Glu Gln Tyr Leu Lys Thr Asp Phe Glu Tyr Asp Lys Tyr
                  195                 200                 205
  Asp Leu Asp Thr Asp Leu Thr Trp His Glu Val Arg Lys Tyr Arg Glu
      210                 215                 220
  Phe Ile Phe Asn Asp Leu Asp Glu Lys Gln Met Lys Tyr Ile His Asn
  225                 230                 235                 240
  Asp Val Ile Ile Leu Ala Leu Thr Cys Lys His Tyr Ser Lys Leu Phe
                  245                 250                 255
  Tyr Gly Phe Asp Phe Glu Lys Gln Thr Phe Thr Gln Asn Ile Lys Glu
                  260                 265                 270
  Glu Tyr Ala Asn Tyr Asn Asp Met Ala Lys Phe Gln Leu Leu Lys Gln
                  275                 280                 285
  Ile Gly Asp Asn Met Thr Gly Lys His Leu Lys Leu Thr Asp Tyr Phe
      290                 295                 300
  Ile Gln Gly Gln Asn Ala Tyr Asp Tyr Phe Lys Asn Tyr Tyr Asn Gly
  305                 310                 315                 320
  Gly Leu Asn Leu Tyr Asn Asp Lys Tyr Ile Gly Lys Lys Leu Val Arg
                  325                 330                 335
  Asp Gly Phe Ser Ile Asp Leu Asn Ser Ser Tyr Pro Thr Val Met Tyr
                  340                 345                 350
  Lys Glu Lys Leu Pro Thr Phe Leu Val Met Val Asp Ser Lys Pro Thr
                  355                 360                 365
  Asp Leu Lys Asn Ile Gly Ser Thr Asp Gly Asp Tyr Met Val Phe Phe
      370                 375                 380
  Asn Met Leu Met Glu Asp Val Asn Asp Gln Ile Leu Ser Arg Ile Lys
  385                 390                 395                 400
  Ser Asn Val Ile Lys Ser Ala Ile Val Lys Tyr Trp Arg Val Lys Asp
                  405                 410                 415
  Gly Tyr Val Trp Leu Asn Asn Val Met Ile Ser Leu Ile Glu Glu Ile
                  420                 425                 430
  Thr His Gln Lys Phe Asn Asn Leu His Val Gln Ser Phe Ser Val Phe
                  435                 440                 445
  Glu Cys His His Phe Gly Ala Arg Asp Ile Ile Ala Lys Asn Tyr Phe
      450                 455                 460
  Ile Lys Thr Gln Gly Lys Met Ser Lys Ala Leu Asn Cys Thr Met Glu
  465                 470                 475                 480
  Thr Ile Asp Pro Leu Asn Ile Glu Leu Thr Asp Lys Asp Lys Pro Lys
                  485                 490                 495
  Glu Tyr Asp Phe Ser His Glu Met Val Glu Gly Ser Lys Val Leu Leu
                  500                 505                 510
  Asn Gly Ile Tyr Gly Ile Pro Ala Leu Arg Ala Tyr Phe Asp Cys Tyr
```

```
         515                    520                      525
Arg Arg Asp Glu Asn Gly Gln Leu Tyr Asn Val Ser Asn Gly Phe Glu
    530                    535                      540
Asn Lys Glu Arg Asn Ile Val Phe Ser Ala Gly Val Thr Ala Phe Ala
545                    550                      555                560
Val Arg Asn Leu Leu Leu Pro Leu Gly Lys Leu Thr Gln Asp Glu Ile
                565                      570                575
Asp Asp Tyr Phe Trp Tyr Ala Asp Thr Asp Ser Leu Tyr Met Asp Lys
            580                      585                590
Arg Ala Leu Pro Lys Leu Pro Lys Ser Met Phe His Lys Met Asn Leu
        595                      600                605
Gly Gly Trp Asp Ile Glu His Ala Asn Ile Ser Thr Phe Tyr Ala Phe
    610                      615                620
Asn His Lys Lys Tyr Cys Leu Tyr Asp Asp Asp Asn Glu Ile Val
625                      630                635                640
Val Arg Cys Gly Gly Ile Ser Lys Ala Leu Ile Lys Lys Trp Ile Ala
                645                      650                655
Glu Ser Arg Asn Asn Ile Asp Tyr Phe Ile Asn Asn Phe Phe Ile Asp
            660                      665                670
Gly Val Thr Ile Pro Ala Thr Arg Ala Ile Arg Asn Glu Trp Asn Thr
        675                      680                685
Ile Thr Ile Tyr Asp Gly Thr Ser Glu Leu Lys Lys Gly Gly Val Tyr
    690                      695                700
Tyr Lys Lys Tyr Asp Thr Asn Leu Leu Gln Asn Ile Glu Ser Glu Leu
705                      710                715                720
Ala Lys Leu Lys Asp Ala Ile Leu Thr Glu Glu Ser Glu Thr Ser Leu
                725                      730                735
Asp Tyr Ser Glu Thr Met Tyr Ile Glu Ser Asn Val Gly Ser Phe Gly
            740                      745                750
Val Ser Asp Leu Tyr Lys Ile Lys Lys Asn Asn Thr Leu Lys Gln Ser
        755                      760                765
Ser Met Ile Val Asp Glu Tyr Asp Val Phe Lys Ser Tyr Leu Ile Tyr
    770                      775                780


<210> 8
<211> 108
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 8
Met Ile Tyr Leu Leu Ile Leu Asn Ser Ala Asp Phe Ile Ser Gly Ile
 1               5                  10                  15
Leu Asn Gly Ile Ala Leu Gly Asp Ile Ser Ser Lys Lys Leu Lys Lys
                20                  25                  30
Gly Ile Ile Gly Lys Leu Leu Gln Trp Ile Val Ile Ala Val Thr Ile
        35                  40                  45
Thr Met Lys Pro Val Ile His Val Asp Leu Leu Thr Tyr Val Ile Ile
    50                  55                  60
Tyr Tyr Tyr Ile Met Glu Val Ile Ser Ile Leu Glu Asn Val Ala Trp
65                  70                  75                  80
Tyr Leu Pro Val Pro Lys Lys Leu Leu Asn Val Leu Ala Gln Phe Lys
                85                  90                  95
Glu Ile Glu Asn Glu Val Lys Ser Asn Glu Gln Asp
            100                 105
```

<210> 9
<211> 72
<212> PRT
<213> Bacteriophage C1 light chain of PlyC (PlyC B)
      (formerly known as the alpha subunit)

<400> 9
Met Ser Lys Ile Asn Val Asn Val Glu Asn Val Ser Gly Val Gln Gly
1   5   10   15
Phe Leu Phe His Thr Asp Gly Lys Glu Ser Tyr Gly Tyr Arg Ala Phe
            20   25   30
Ile Asn Gly Val Glu Ile Gly Ile Lys Asp Ile Glu Thr Val Gln Gly
            35   40   45
Phe Gln Gln Ile Ile Pro Ser Ile Asn Ile Ser Lys Ser Asp Val Glu
        50   55   60
Ala Ile Arg Lys Ala Met Lys Lys
65   70

<210> 10
<211> 105
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 10
Met Ile Glu Glu Trp Val Lys His Pro Ser Leu Asn Tyr Tyr Ile Ser
1   5   10   15
Ser Tyr Gly Arg Val Lys Asn Ser Lys Gly Leu Ile Met Lys Gln His
            20   25   30
Ile Cys Asn Gly Tyr Lys Arg Ile Lys Leu Val Lys Asp Gly Ile Lys
            35   40   45
Lys Asn Tyr Tyr Val His Arg Leu Val Ala Glu Thr Phe Ile Pro Lys
        50   55   60
Leu His Val Asp Tyr Val Val His His Ile Asp His Asp Lys Leu Asn
65   70   75   80
Asn Trp Val His Asn Leu Glu Trp Cys His Tyr Gln Thr Asn Leu Leu
            85   90   95
Tyr Glu Arg Glu Asn Leu Phe Asn Glu
            100   105

<210> 11
<211> 472
<212> PRT
<213> Bacteriophage C1 heavy chain of PlyC (PlyC A)
      (formerly known as the beta subunit)

<400> 11
Met Lys Gly Arg Ile Tyr Leu Met Ser Lys Lys Tyr Thr Gln Gln Gln
1   5   10   15
Tyr Glu Lys Tyr Leu Ala Gln Pro Ala Asn Asn Thr Phe Gly Leu Ser
            20   25   30
Pro Gln Gln Val Ala Asp Trp Phe Met Gly Gln Ala Gly Ala Arg Pro
            35   40   45
Val Ile Asn Ser Tyr Gly Val Asn Ala Ser Asn Leu Val Ser Thr Tyr
        50   55   60
Ile Pro Lys Met Gln Glu Tyr Gly Val Ser Tyr Thr Leu Phe Leu Met

```
65                      70                      75                      80
Tyr Thr Val Phe Glu Gly Gly Gly Ala Gly Asn Trp Ile Asn His Tyr
                85                      90                      95
Met Tyr Asp Thr Gly Ser Asn Gly Leu Glu Cys Leu Glu His Asp Leu
            100                     105                     110
Gln Tyr Ile His Gly Val Trp Glu Thr Tyr Phe Pro Pro Ala Leu Ser
        115                     120                     125
Ala Pro Glu Cys Tyr Pro Ala Thr Glu Asp Asn Ala Gly Ala Leu Asp
    130                     135                     140
Arg Phe Tyr Gln Ser Leu Pro Gly Arg Thr Trp Gly Asp Val Met Ile
145                     150                     155                     160
Pro Ser Thr Met Ala Gly Asn Ala Trp Val Trp Ala Tyr Asn Tyr Cys
                165                     170                     175
Val Asn Asn Gln Gly Ala Ala Pro Leu Val Tyr Phe Gly Asn Pro Tyr
            180                     185                     190
Asp Ser Gln Ile Asp Ser Leu Leu Ala Met Gly Ala Asp Pro Phe Thr
        195                     200                     205
Gly Gly Ser Ile Thr Gly Asp Gly Lys Asn Pro Ser Val Gly Thr Gly
    210                     215                     220
Asn Ala Thr Val Ser Ala Ser Ser Glu Ala Asn Arg Glu Lys Leu Lys
225                     230                     235                     240
Lys Ala Leu Thr Asp Leu Phe Asn Asn Asn Leu Glu His Leu Ser Gly
                245                     250                     255
Glu Phe Tyr Gly Asn Gln Val Leu Asn Ala Met Lys Tyr Gly Thr Ile
            260                     265                     270
Leu Lys Cys Asp Leu Thr Asp Asp Gly Leu Asn Ala Ile Leu Gln Leu
        275                     280                     285
Ile Ala Asp Val Asn Leu Gln Thr Asn Pro Asn Pro Asp Lys Pro Thr
    290                     295                     300
Val Gln Ser Pro Gly Gln Asn Asp Leu Gly Ser Gly Ser Asp Arg Val
305                     310                     315                     320
Ala Ala Asn Leu Ala Asn Ala Gln Ala Gln Val Gly Lys Tyr Ile Gly
                325                     330                     335
Asp Gly Gln Cys Tyr Ala Trp Val Gly Trp Trp Ser Ala Arg Val Cys
            340                     345                     350
Gly Tyr Ser Ile Ser Tyr Ser Thr Gly Asp Pro Met Leu Pro Leu Ile
            355                     360                     365
Gly Asp Gly Met Asn Ala His Ser Ile His Leu Gly Trp Asp Trp Ser
    370                     375                     380
Ile Ala Asn Thr Gly Ile Val Asn Tyr Pro Val Gly Thr Val Gly Arg
385                     390                     395                     400
Lys Glu Asp Leu Arg Val Gly Ala Ile Trp Cys Ala Thr Ala Phe Ser
            405                     410                     415
Gly Ala Pro Phe Tyr Thr Gly Gln Tyr Gly His Thr Gly Ile Ile Glu
            420                     425                     430
Ser Trp Ser Asp Thr Thr Val Thr Val Leu Glu Gln Asn Ile Leu Gly
            435                     440                     445
Ser Pro Val Ile Arg Ser Thr Tyr Asp Leu Asn Thr Phe Leu Ser Thr
    450                     455                     460
Leu Thr Gly Leu Ile Thr Phe Lys
465                     470


<210> 12
<211> 574
<212> PRT
<213> Bacteriophage C1 polypeptide
```

<400> 12
```
Met Thr Leu Ser Lys Ile Lys Leu Phe Tyr Asn Thr Pro Phe Asn Asn
 1               5                   10                  15
Met Gln Asn Thr Leu His Phe Asn Ser Asn Glu Glu Arg Asp Ala Tyr
            20                  25                  30
Phe Asn Ser Lys Phe Asp Val His Glu Phe Thr Ser Thr Phe Asn Tyr
            35                  40                  45
Arg Asn Met Lys Gly Val Leu Arg Val Thr Ile Asp Leu Val Ser Asp
    50                  55                  60
Arg Ser Cys Phe Glu Gln Leu Met Gly Val Asn Tyr Cys Gln Val Gln
65                  70                  75                  80
Tyr Ile Gln Ser Asn Arg Val Glu Tyr Leu Phe Val Thr Asp Ile Gln
                85                  90                  95
Gln Leu Asn Asp Lys Val Cys Glu Leu Ser Leu Val Pro Asp Val Val
            100                 105                 110
Met Thr Tyr Thr Gln Gly Asn Val Leu Asn Thr Leu Asn Asn Val Asn
            115                 120                 125
Val Ile Arg Gln His Tyr Thr Gln Thr Glu Tyr Glu Gln Asn Leu Glu
    130                 135                 140
Gln Ile Arg Ser Asn Asn Asp Val Leu Ala Thr Ser Thr Met Arg Val
145                 150                 155                 160
His Ala Ile Lys Ser Glu Leu Phe Thr Gln Leu Glu Tyr Ile Leu Thr
                165                 170                 175
Ile Gly Ala Asn Leu Arg Lys Ser Phe Gly Thr Ala Glu Lys Pro Lys
            180                 185                 190
Phe Pro Ser Ser Ser Gly Ser Thr His Asp Gly Ile Tyr Asn Pro Tyr
            195                 200                 205
Asp Met Tyr Trp Phe Asn Asp Tyr Glu Ser Leu Lys Glu Val Met Asp
    210                 215                 220
Tyr Leu Thr Gly Tyr Pro Trp Ile Gln Gln Ser Ile Lys Asn Val Thr
225                 230                 235                 240
Ile Ile Pro Ser Gly Phe Ile Lys Gln Glu Ser Leu Asn Asp His Glu
            245                 250                 255
Pro Val Asn Gly Gly Asp Leu Ser Val Arg Lys Leu Gly Lys Gln Gly
            260                 265                 270
Val Ser Asn Gln Lys Asp Phe Asn Ala Ile Ser Leu Asp Tyr Gln Ser
    275                 280                 285
Leu Met Phe Thr Leu Gly Leu Asn Pro Ile Asn Asp Lys His Leu Leu
    290                 295                 300
Arg Pro Asn Ile Val Thr Ala Glu Leu Thr Asp Tyr Ala Gly Asn Arg
305                 310                 315                 320
Leu Pro Ile Asp Leu Ser Leu Ile Glu Thr Asn Leu Glu Phe Asp Ser
            325                 330                 335
Phe Val Thr Met Gly Ala Lys Asn Glu Ile Lys Val Tyr Val Lys Asn
            340                 345                 350
Tyr Asn Ala Arg Gly Asn Asn Val Gly Gln Tyr Ile Asp Asn Ala Leu
            355                 360                 365
Thr Ile Asn Asn Phe Asp Thr Ile Gly Phe Ser Val Asp Ser Gly Glu
    370                 375                 380
Leu Gly Lys Ala Asn Ser Ala Tyr Ser Arg Glu Leu Ser Asn Ser Arg
385                 390                 395                 400
Gln Met Ser Ser Arg Ile Asn Thr Val Leu Asp Asn Asp Ala Ser Val
            405                 410                 415
Lys Asp Arg Leu Phe Asn Ala Ile Ser Leu Ser Gly Gly Leu Ser Ile
            420                 425                 430
Lys Ser Ala Leu Ser Gly Phe Asn Asn Glu Tyr Glu His Tyr Arg Asp
```

```
        435                440                445
Gln Lys Ala Gln Phe Lys Gln Met Asp Ala Leu Pro Asn Ala Ile Thr
    450                455                460
Glu Gly His Val Gly Tyr Ala Pro Leu Phe Lys Gln Asp Lys Phe Gly
465                470                475                480
Val His Leu Arg Leu Gly Arg Ile Ser Gln Asp Glu Leu Asn Asn Val
                485                490                495
Lys Lys Tyr Tyr Asn Met Phe Gly Tyr Glu Cys Asn Asp Tyr Ser Thr
            500                505                510
Lys Leu Ser Asp Ile Thr Ser Met Ser Ile Cys Asn Trp Val Gln Phe
        515                520                525
Lys Gly Ile Trp Thr Leu Pro Asn Val Asp Thr Gly His Met Asn Met
    530                535                540
Leu Arg Ala Leu Phe Glu Ala Gly Val Arg Leu Trp His Lys Glu Ser
545                550                555                560
Asp Met Ile Asn Asn Thr Val Val Asn Asn Val Ile Ile Lys
                565                570


<210> 13
<211> 430
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 13
Met Arg Gly Thr Asn Tyr Met Lys Phe Tyr Ile Asn Pro Phe Asp Gln
 1               5                10                15
His His Asp His Met Ser His His Asp His Glu His Trp Lys Glu Leu
            20                25                30
Gln Phe Ser Lys Ala Val Ala Asp Ala Ile Asn Ala Asn Ser Glu Lys
        35                40                45
Asn Ile Glu Gln Asp Gly Arg Leu Asp Gly His Asp Lys Asp Val Gln
    50                55                60
Asp Leu Lys Asn Ala Asp Leu Glu Ile Ile Gln Gln Ile Asp Glu Val
65                70                75                80
Ala Ala Gln Ala Ala Glu Asn Lys Asn Leu Leu Gly Asn Leu Lys Gly
            85                90                95
Ala Glu Thr Ser Thr Ala Lys Ser Asn Ile Tyr Asn Gly Ile Gln Val
            100                105                110
Asp Val Lys Val Ala Pro Gln Ser Asp Asn Gly Leu Lys Ile Thr Thr
        115                120                125
Asp Gly Leu His Val Val Asp Tyr Thr Ser Lys Ile Ala Glu Ile Glu
    130                135                140
Gln Leu Ile Asp Glu Ile Leu Thr Pro Glu Gly Ser Asp Val Thr Met
145                150                155                160
Glu Gln Ile Arg Ala Met Ile Glu Asn Leu Ser Gln Glu Phe Gly Glu
            165                170                175
Ala Asp Ala Gly Leu Lys Leu Gln Ile Asp Asn Met Glu Lys Arg Leu
        180                185                190
Ile Ala Leu Asp Ile Pro Asp Ile Asp Pro Leu Thr Gln Lys Ile Glu
    195                200                205
Leu Leu Asp Ala Asp Ile Leu Gly Val Lys Gln Ile Ser Thr Tyr Thr
    210                215                220
Glu Met Met Asn Ser Leu Ala Thr Phe Gly Ser Arg Glu Gly Ser Lys
225                230                235                240
Ala Ile Arg Phe Asn Pro Val Gly Asn Ala Ser Thr Gly Thr Gln Ile
            245                250                255
```

```
Asp Pro Asn Gly Gly Met Asn Leu Leu Tyr Gln Ser His Thr Phe Gln
        260                 265                 270
Val Arg Gly Val Thr Lys Arg Phe Glu Phe Leu Leu Leu Asp Ile Trp
        275                 280                 285
His Met Thr Phe Arg Gly Thr Gly Trp Pro Glu Gln Val Ala Asp Met
        290                 295                 300
Tyr Tyr Phe Met Leu Asp Ile Tyr Ala Glu Gly Val Thr Asp Arg Leu
305                 310                 315                 320
Lys His Val Leu Ser Asn Asn Ala Ile Thr Met Asn Asp Phe His Gln
                325                 330                 335
Phe Asp Asn Asn Ala Gln Val Lys Lys Trp Tyr Pro Val Val Phe Thr
                340                 345                 350
Leu Tyr Gly Asn Asp Asp Lys Glu Glu Met Tyr Leu Val Ala Gln Gly
        355                 360                 365
Leu Gly Thr Ser Gly Leu Asp Thr Glu Ser Leu Asp Asn Phe Arg Ala
        370                 375                 380
Pro Ala Thr Gly Thr Pro Tyr Val Ile Glu Thr Trp Leu Asp Pro Val
385                 390                 395                 400
Thr Gly Thr Glu Tyr Met Pro Ala Tyr Gln Ala Asp Gly Tyr Lys His
                405                 410                 415
Lys Pro Phe Asn Gln Trp Val Thr Val Glu Asp Phe Tyr Ser
                420                 425                 430


<210> 14
<211> 236
<212> PRT
<213> Bacteriophage C1 polypeptide

<400> 14
Met Arg Leu Phe Glu Leu Ile Tyr Lys Glu Val Val Lys Asn Gly Tyr
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Ala Gln Ile Glu Thr Lys Ile Met Met Tyr Asp Glu Asp Val Gln Lys
        35                  40                  45
Val Val Asn Glu Leu Ile Phe Thr Gly Ser Lys Val Asn Glu Asp Phe
        50                  55                  60
Arg Glu Glu Phe Val Asn Tyr Phe Phe Asn Arg Glu Pro His Trp Asp
65                  70                  75                  80
Ser Leu Tyr Ile Phe Arg Ala Lys Leu Lys Gly Ile Leu Lys Thr Lys
                85                  90                  95
Glu Ala Val Leu Asn Met Leu Tyr Leu Lys Ser Thr Glu Leu Leu Leu
                100                 105                 110
Gly Glu Ser Met Ser Lys Ser Glu Gly His Ser Ser Asn Glu Asn Arg
        115                 120                 125
Ser Arg Asp Asn Ser Thr Asn Glu Ser Asn Gly Glu Asn Arg Gly Ala
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145                 150                 155                 160
Thr Ala Asn Leu Ser Tyr Ala Asp Asn Leu Asp Lys Ser Tyr Asn Glu
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Ser Val Asn Val Ser His Ser Lys Gly Ile Ser Ser Ser Gln Gly Ser
                180                 185                 190
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Asn Tyr Phe Asn Ile Ile Tyr Ser Arg Tyr Val Glu Phe Leu Pro Leu
         35                  40                  45
Leu Ile Ser Tyr Glu Asn Tyr Asp Leu Asp Ser Leu Leu Ile Glu Ser
         50                  55                  60
Tyr Leu Arg Ala Gly Tyr Gly Val Ala Ile Gly Glu Thr Lys Thr Gly
65                  70                  75                  80
Lys Ile Asp Val Leu Gly Tyr Cys Ser Val Asn Thr Asn Tyr Leu Gln
                 85                  90                  95
Pro Ile Lys Glu Pro Leu Gln Gly Lys Asp Ile Thr Phe Ile His Asn
             100                 105                 110
Asn Ile Leu Pro Lys Gly Lys Tyr Lys Glu Leu Thr Arg Tyr Ser Asp
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Gly Asn Phe Val Val Leu Arg Asn Lys Arg Ala Ser Phe Leu Cys Asp
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Tyr Asn Ile Ile Thr His Tyr Val Met Glu Met Ser Glu Ile Ala Asn
145                 150                 155                 160
Ser Arg Tyr Ser Ile Ser Ile Gln Ala Lys Val Asn Thr Phe Ile Arg
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Asn Glu Gly Gly Ser Lys Asp Gly Gln Val Met Ala Asn Asn Leu Phe
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Asn Gly Val Pro Tyr Thr Ala Thr Thr Pro Lys Phe Asp Pro Glu Glu
             195                 200                 205
His Ile Leu Thr Phe Asn Asn Ala Ser Ala Val Ser Phe Leu Pro Glu
         210                 215                 220
Leu Lys Arg Glu Gln Gln Asn Lys Ile Ser Glu Leu Asn Ala Met Leu
225                 230                 235                 240
Gly Leu Asn Thr Leu Gly Val Asp Lys Glu Ser Gly Val Ser Glu Ile
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Glu Ala Gln Ser Asn Thr Ala Phe Lys Lys Ala Asn Glu Asn Ile Tyr
             260                 265                 270
Leu Gly Ile Arg Asn Glu Ala Leu Asn Leu Ile Asn Asn Lys Tyr Gly
         275                 280                 285
Leu Asn Ile His Ala Glu Tyr Arg Asp Asn Met Val Ala Glu Leu Ser
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<213> Bacteriophage C1 polypeptide
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            35   40   45
Phe Pro Lys Leu Asn Glu Thr Leu Ile Val Glu Thr Ala Ala Gly Asn
        50   55   60
Arg Leu Asp Trp Leu Ala Lys Glu Ile Asp Phe Ile Gly Gln Tyr Ser
65   70   75   80
Glu Glu Tyr Val Ile Leu Asp Thr Val Pro Val Glu Leu Asp Leu Ser
                85   90   95
Lys Ser Ala Gln Leu Met Leu Glu Arg Asn Tyr Pro Lys Ile Ala Ser
            100   105   110
Lys Leu Tyr Gly Ala Gly Ile Leu Lys Lys Leu Lys Phe Thr Leu Asn
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Asp Asn Ile Gln Arg Gln Gln Phe Ala Thr Leu Gly Asp Ala Thr Lys
            130   135   140
Phe Ala Val Gln Val Tyr Lys Lys Lys Ile Ala Asp Ile Asn Ile Ser
145   150   155   160
Glu Glu Gln Glu Leu Lys Ala Ile Ile Met Asp Tyr Thr Ser His Ile
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Ala Asp Val Arg Glu Val Glu Ser Gly Ala Thr Met Gln Gln Phe Ile
            180   185   190
Asn Lys Val Tyr Thr Ala Ile Leu Asn Leu Gln Asn Asn Ser Ala Lys
            195   200   205
His Asn Glu Ala Ala Gln Ala Ser Gly Gly Ala Val Gly Arg Phe Thr
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Thr Asn Thr Lys Leu Lys Asp Met Leu Ile Val Thr Thr Asp Glu Met
225   230   235   240
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Gly Leu Asp Ile Thr Ser Gln Ile Ile Ser Phe Glu Asp Leu Gly Gly
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Val Tyr Lys Ala Ala Glu Asp Ile Thr Val Asp Ala Thr Ile Gln Gly
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Val Met Ala Ala Met Gly Asp Tyr Gln Val Lys Ala Gly Asp Val Ile
            290   295   300
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305   310   315   320
Asp Gln Ala Asp Ala Leu Val Glu Val Lys Pro Asp Ser Asp Glu Phe
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Val Ala Ile Phe Asp Val Arg Ser Ile Arg Tyr Lys Arg Tyr Thr Arg
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Asn Met Leu Lys Ala Pro Phe Tyr Asn Gly Glu Phe Asp Glu Val Thr
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Lys Val Val Ile Lys Arg Ala Asn
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<210> 17
<211> 51
<212> PRT

<213> Bacteriophage C1 polypeptide

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Phe Asn Leu
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<210> 18
<211> 56
<212> PRT
<213> Bacteriophage C1 polypeptide

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Pro Lys Gln Gln Glu Glu Gln Glu Pro Glu Val Thr Pro Ile Asp Glu
        35   40   45
Ile Glu Glu Trp Leu Lys Glu Asp
    50   55

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<211> 64
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<213> Bacteriophage C1 polypeptide

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Tyr His Ile Tyr Ala Tyr Val Asn Gly Lys Trp Ile Lys Val Tyr Val
                20   25   30
Thr Arg Asp Val Glu Asp Arg Asp Lys Val Met Leu Thr Leu Lys Asn
        35   40   45
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    50   55   60

<210> 20
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<212> PRT
<213> Bacteriophage C1 polypeptide

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Met Val Tyr Asp Ile Ile Lys
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<213> Bacteriophage C1 lysin intergenic locus(lil)

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<220>
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